

Economic and cultural value, urban and built heritage, architecture education: the active role of stakeholders

Original

Economic and cultural value, urban and built heritage, architecture education: the active role of stakeholders / Curto, ROCCO ANTONIO; Fregonara, Elena; Barreca, Alice; Rolando, Diana. - ELETTRONICO. - (2018), pp. 45-46.
(Intervento presentato al convegno PBL for Sustainable Cities tenutosi a Bogotá - Colombia nel 19-21 Settembre 2018).

Availability:

This version is available at: 11583/2725752 since: 2019-02-20T11:20:35Z

Publisher:

Politecnico di Torino

Published

DOI:

Terms of use:

openAccess

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

Publisher copyright

(Article begins on next page)

PBL FOR SUSTAINABLE CITIES

RESULTS OF THE CITYLAB LA PROJECT

ENGAGING STUDENTS WITH SUSTAINABLE CITIES IN LATIN-AMERICA



ACADEMIC CONFERENCE 19TH-21ST SEPTEMBER 2018

UNIVERSIDAD DEL ROSARIO

BOGOTÀ - COLOMBIA



Co-funded by the
Erasmus+ Programme
of the European Union



PBL FOR SUSTAINABLE CITIES CONFERENCE

Editorial project

Tom Coppens, Elena Fregonara, Alice Barreca, Stijn Rybels, Nina De Jonghe

Editorial staff

Cristina Franco, Giorgio Pugnetti – Ufficio Relazioni Esterne DAD

Layout and Cover Design

Cristina Franco, Giorgio Pugnetti – Ufficio Relazioni Esterne DAD

This is an open access book licensed under the Creative Commons Attribution-No commercial 4.0 International License. <https://creativecommons.org/licenses/by/4.0/deed.en>



© 2018 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY NC) license (<http://creativecommons.org/licenses/by/4.0/>).

ISBN: 978-88-85745-13-1

This book is available from

<https://www.citylab-la.eu>

<http://www.urosario.edu.co/Citylab/inicio>

<http://www.biblio.polito.it/>

published by:
Politecnico di Torino



POLITECNICO
DI TORINO

supported by:
Erasmus+ Programme of the European Union

Co-funded by the
Erasmus+ Programme
of the European Union



This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

*Results of the Citylab LA Project
Engaging students with sustainable cities in Latin-America
19th-21st September 2018 - Bogotá, Colombia*



PBL FOR SUSTAINABLE CITIES
RESULTS OF THE CITYLAB LA PROJECT
ENGAGING STUDENTS WITH SUSTAINABLE CITIES IN LATIN-AMERICA

ACADEMIC CONFERENCE 19TH-21ST SEPTEMBER 2018
UNIVERSIDAD DEL ROSARIO - BOGOTÀ - COLOMBIA



PBL FOR SUSTAINABLE CITIES CONFERENCE



Co-funded by the
Erasmus+ Programme
of the European Union



CityLab conference is organised by the European project "CityLab. Engaging students for sustainable cities", and hosted by the Universidad del Rosario

<https://www.citylab-la.eu>

<http://www.urosario.edu.co/Citylab/inicio>

http://ec.europa.eu/programmes/erasmus-plus/news/first-higher-education-capacity-building-projects-selected_en



Welcome!

PBL for Sustainable Cities Conference 2018

Dear PBL for Sustainable Cities Conference 2018 delegates,
We are proud to present the book of abstracts of the PBL for sustainable cities conference in Bogota, September 19-22, 2018. This book is an important result of the CITYLAB LA project, co-funded by the Erasmus+ programme of the European union. The CITYLAB project brought 12 Latin-American and 5 European partners together around a common goal: innovating the way we teach so that the next generation of urban professionals will be better equipped to make our life in cities more sustainable. Cities provide both challenges and opportunities to deal with global trends such as mass migration, ageing, resource depletion, climate change, degrading environmental conditions and urban poverty and injustice. In dealing with these complex problems, it is increasingly clear that old disciplinary ways of thinking and siloed approaches will not suffice any longer. There is a need for inter- and transdisciplinary approaches that look in a holistic way at these problems. Professionals of the future will therefore need a whole set of hard and soft competences that allow them to find original, out-of-the box and collaborative solutions.

The Citylab LA project aims to innovate teaching for sustainability through the introduction and development of problem based learning methods in the curricula of higher education institutions, in particular in the urban sector. Problem based learning is a pedagogical approach that is suited in education for sustainability education because it focuses on the problems to be addressed and not on the existing knowledge as point of departure. It encourages students to take the learning process in their own hands. It stimulates soft skills such as intrinsic motivation, critical thinking and collaborative problem solving.

The participating universities of the project have each developed Citylab modules in their curricula following the principles of problem based learning, in which students from different disciplines collaborate on



problems of urban sustainability. They have been coached by teachers from different faculties. In order to make the Citylab modules a realistic learning environment also real practitioners from urban governments and other urban actors have been involved. Moreover, the project encouraged teacher mobility through the exchange of experts during the project. In the period between 2015-2018, Citylab modules have run at 15 different universities. The project involved no less than x teachers spread over 15 different campus teams and in total more than 3000 students have been enrolled in the Citylab modules.

This book is not a traditional book of abstracts, but reflects the hybrid nature of the conference. It compiles experiences from different perspectives of the participants of the Citylab project: academics, teachers and students. The first part contains the scientific output of the conference. The keynote speeches address the core issues of the Citylab project. Erik de Graaff from the university of Aalborg is an authority on Problem based learning and addresses opportunities and pitfalls in PBL for sustainability education. Terry Maguire is director of the national forum for the Enhancement Teaching and Learning in Ireland and focuses in her speech on the competencies for teachers. Rogier van den Berg is project manager of the urban planning and design lab of UN Habitat.

We encouraged academics involved in the project to critically reflect on their teaching experience in the Citylab project and to position themselves in the broader field of sustainability education. The results are reflected in the abstracts which cover 5 different themes: innovation in education for sustainability, collaboration between universities and external actors, implementation of educational innovations, experiences with international expert exchanges and finally sustainable development goals for cities.

The second part describes the results of the Citylab modules. For each Citylab module a description is given on the modalities of the module by the participating teachers. It is the result of the campus teams that have developed and implemented the module at their university. From each module, the best student team has been selected at the



partner universities to present at the conference. Students have worked on urban sustainability problems with the aim of contributing to the sustainable development goals.

We wish you a pleasant lecture of this book and we hope that it can inspire you as a teacher, student or urban professional.

Coordinator of the project
Prof. Dr. Ir. Tom Coppens
tom.coppens@uantwerpen.be



Organizing /Scientific committee

PBL for Sustainable Cities Conference 2018

Conference Chair

Prof. Dr. Ir. Tom Coppens – University of Antwerp

Vice Conference Chair

José Miguel Fernandez Güell– Universidad Politecnica de Madrid

Scientific Committee

José Miguel Fernandez Güell

Denise Pinheiro Machado

José Ripper Kós

Sandra Ornés Vasquez

Yuherqui Guaimaro

Madeleine Diana García Daccarett de Baracco

Oriana Castillo

Isabel Gonzalez

Stijn Rybels

Andrés Felipe Valderrama Pineda

Organizing Committee

Diana Carolina Cabrera Moreno – Universidad del Rosario

Stijn Rybels - University of Antwerp

Nina De Jonghe - University of Antwerp



Table of Contents

Keynotes

K1	Problem Based Learning, <i>Erik de Graaff</i>	14
K2	Teaching governance and participatory approach, <i>Terry Maguire</i>	16
K3	PBL and Sustainable Development Goals, <i>Rogier van den Berg</i>	19

Postcard from Citylab partners

P1	University of Antwerp (UA).....	23
P3	Universidad Politécnica de Madrid (UPM).....	24
P4	Politecnico di Torino (POLITO).....	25
P5	University of Technologie of Compiègne (UTC).....	26
P6	Fundación Universidad de Belgrano “Dr. Avelino Porto” (UB)	27
P7	National University of Córdoba (UNC).....	28
P8	Universidad Tecnológica de Pereira (UTP).....	29
P9	Universidad del Rosario (URO).....	30
P10	Universidad Autónoma de Nuevo León (UANL)	31
P11	University of Guanajuato (UG)	32
P12	Universidad Simón Bolívar (USB)	33
P13	Universidad Metropolitana (UNIMET)	34
P14	University of Lima (UL)	35
P15	Universidad del Pacífico (UP)	37
P16	Universidade Federal do Rio de Janeiro (UFRJ)	38
P17	Universidade Federal de Santa Catarina (UFSC)	39

Conference abstracts

Track I - PBL and other innovative learning methods

IA 1	PBL Collaborative and cumulative dynamics towards urban sustainable environments	41
IA 2	An experience of PBL in the learning of urban planning.	



	Chair of Urbanism IIA, FAUD, UNC, Argentine Republic.....	43
IA 3	Economic and cultural value, urban and built heritage, architecture education: the active role of stakeholders	45
IA 4	Transdisciplinary education through a solar house.....	47
IB 5	Academic performance of students of urban design, applying traditional teaching versus PBL	49
IB 6	PBL an innovative learning tool for urban planning teaching? Advantages and limitations for its application in undergraduate teaching in the Spanish context	51
IB 7	Developing a teaching methodology: from intuition to PBL.....	54
IB 8	Influence of PBL strategies in the transformation of teaching and learning in University of Rosario, Bogotá	55
 Track IIA - PBL: Collaborative process with external actors		
IIA 1	PBL methodology: Linkage between the university and urban actors in the face of sustainability problems.....	57
IIA 2	An interdisciplinary PBL capstone course for Management Sciences: The challenges of its design and implementation.....	59
IIA 3	Integrating disciplines on PBL at the Autonomous University of Nuevo Leon.....	60
IIA 4	It Takes Two Tango. Modalities and benefits of the collaboration between universities and local governments.....	61
IIA 5	Human and nature dynamics through collaborative data and integrative process	62
 Track IIB - Implementation of PBL to different scales of intervention		
IIB 6	Comprehensive Evaluative Perspective of PBL on the Learning-Teaching Process of Architecture in the Universidad Simón Bolívar	64
IIB 7	Plan4CuRe : cultural resilience as a base for engaging students in bottom-up development, the case of Marienburg	66
IIB 8	PBL for sustainable Cities, an experience in the initial level of architecture teaching	68



IIB 9	Interdisciplinarity and PBL in the UTP-Colombia experience	70
IIB10	The PEAMA Sumapaz. A pedagogical contribution for an ecological and sustainable relationship in rural Bogotá	73

Track III - PBL International expert experiences

IIIA 1	World Café as a participatory approach to facilitate the implementation process of PBL	75
IIIA 2	International collaboration in PBL experience analysis and methodological contribution. A study of accessibility and mobility for the UFRJ's Campus on the island of "Fundão" in Brazil	77
IIIA 3	The Crowdmapping Mirafiori Sud experience (Torino, Italy): an educational methodology through a collaborative and inclusive process	78
IIIA 4	Education strategies for a positive environmental impact	80
IIB 5	3D models as a multidisciplinary researching and learning tool	82
IIB 6	Is the Design Studio always Problem Base Learning? Comparative view among DSL and PBL at Simon Bolivar University	84
IIB7	Innovating education for sustainable urban development through Problem Based Learning in Latin America: lessons from the CITYLAB experience.....	86

Track IV - PBL and Sustainable Development Goals

IVA 1	A Mix Strategy for Assessing an Interdisciplinary PBL course	89
IVA 2	Evaluation of PBL implementation in undergraduate courses at the Simón Bolívar University. A scalable experience	90
IVA 3	Designing equipment for sustainable cities. Work from the university for specific requirements of the community of Mendiola.....	92
IVA 4	Implementation of 'Sustainable urban projects' course as a curricular introduction of PBL at the University of	



Guanajuato, Mexico	94
IVA 5 Problem-based learning in higher education: Methodologies for the technical, social and political evaluation of urban plans under an urban sustainability approach	96

Students' contributions

P1 University of Antwerp (UA).....	100
P3 Universidad Politécnica de Madrid (UPM)	102
P5 University of Technologie of Compiègne (UTC).....	104
P6 Fundación Universidad de Belgrano "Dr. Avelino Porto" (UB)	106
P7 National University of Córdoba (UNC).....	108
P8 Universidad Tecnológica de Pereira (UTP).....	116
P9 Universidad del Rosario (URO).....	118
P10 Universidad Autónoma de Nuevo León (UANL)	122
P11 University of Guanajuato (UG)	124
P13 Universidad Metropolitana (UNIMET)	126
P14 University of Lima (UL)	128
P15 Universidad del Pacífico (UP)	132
P16 Universidade Federal do Rio de Janeiro (UFRJ)	134
P17 Universidade Federal de Santa Catarina (UFSC)	136



P4 - Politecnico di Torino POLITO



Atelier Architecture heritage preservation and enhancement A
Architecture and Design Department
Politecnico di Torino, Italy

The Atelier concludes the second degree programme in Architecture for Heritage Preservation and Enhancement. It introduces students to the problems of economic - financial viability in the conservation of historical, architectural, environmental heritage assets. Through a case-study students experience the PBL approach, in which they face real problems involving stakeholders, including the local administration that plays a key role. It is conceived as a multidisciplinary module, with the main contribution of Restoration and Project Economic Evaluation, but it is expected the direct involvement of other disciplines from Engineering. External actors will be involved: Public Administration (Municipality), Superintendence for Cultural Heritage, Piedmont Region, Private Foundations and associations, Private bodies, Investors, Citizens.

The Citylab module focuses on the potentialities of the PBL addressing real problems by identifying sustainable and effective design processes and by developing skills to analyze also non-technical aspects of problems. The students involvement methods are explicated, in order to highlight how they have been made to feel responsible, collaborative and active within a real community. The role of the stakeholders and the ways of interacting with them are detailed to demonstrate the related positive impacts on the learning process and on the development of multidisciplinary, concrete and sustainable redevelopment projects.



CITYLAB LA - Engaging students with sustainable cities in Latin America

PROGRAM(S) **Master of Science in "Architecture for**

Heritage Preservation and Enhancement"

LEVEL **Master** STUDENTS **40**

MODALITY **Studio course** ECTS **6**

TIMING **Oct 2018 - Jan2019** SDGs **11.4**

CONTACT **rocco.curto@polito.it**





Economic and cultural value, urban and built heritage, architecture education: the active role of stakeholders

Rocco Curto – Politecnico di Torino – rocco.curto@polito.it

Elena Fregonara – Politecnico di Torino – elena.fregonara@polito.it

Alice Barreca – Politecnico di Torino – alice.barreca@polito.it

Diana Rolando – Politecnico di Torino – diana.rolando@polito.it

Innovation in architecture education is increasingly oriented towards the analysis of real problems considered in their multi-dimensionality and the active involvement of the stakeholders. In learning processes, it is useful to face real case studies so that students acquire disciplinary tools and technical knowledge for the definition of sustainable projects, closely linked to the territorial reality, the socio-economic context and the needs expressed by the different stakeholders involved. With an approach of students' inclusion and involvement in the process of knowledge and definition of the problem under study, they are responsible for their project, collaborate with each other and with external stakeholders and become active in the community of reference. For the students this implies competences in engaging with stakeholders establishing consistent vocabularies, and facilitating participatory research and decision making in collaboration with experts from academia, industry, government, and civil society.

Assuming these premises, the aim of this paper is to highlight how the active role of the stakeholders can improve the economic and cultural value of enhancement projects developed in Architecture and Planning Schools, focusing on the potentialities of the Problem-Based Learning (PBL) approach in addressing sustainable and effective design processes.

For this purpose, a three steps methodology based on PBL approach is presented in order to facilitate the active involvement of the stakeholders in improving the economic and cultural value of complex building



heritages at the architectural and urban scale, starting from real problems and developing sustainable and feasible projects. Each step of the proposed methodology was applied during the atelier “Heritage Preservation and Enhancement”, carried out at the Politecnico di Torino and implemented as a module within the Erasmus + EU project “Citylab. Engaging students with sustainable cities in Latin-America”, co-funded by the European Commission.

Specific results were achieved for each step through the interaction among stakeholders, teachers and students and the application of evaluation tools. In particular, the steps and the related findings mainly regarded the context and the main problem definition, the knowledge acquisition and management and the development of feasible and sustainable projects.

This experience highlighted the learner’s role in defining problems and alternative design solutions, focusing not so much on the intended result (project) as on the path to get there and so start the transformation from a project-based approach to a PBL one.

Keywords: *Problem Based Learning; architecture education; sustainable cities; cultural heritage economic evaluation; stakeholders*